Authorized Protocol
February 2000

Protocol
for
Incidental Take Authorization

Silphium Borer Moth (*Papapaima silphii)*

Note

If carrying out a given protocol is not feasible, or multiple listed species in a given management area pose conflicts, contact the Bureau of Endangered Resources at 608/264-6057. Staff in BER will work with Integrated Science Services (Research) staff, species experts and managers to establish an acceptable protocol for a given site that will allow for incidental take without further legal Consultation or public notice

I. Species Background Information

A. Status

State Status: Endangered

USFWS (Region 3) Species of Management Concern: No

Number of Known Sites in Wisconsin: 12 sites total in the counties of Columbia, Dane, Green, Jefferson, Kenosha, Walworth, and Waukesha.

Global Range: Uncertain. Confirmed in WI, MI, OH, IN, and IL. Possible in IA.

B. Habitat

Host plants: The S*ilphium* species prairie dock, cup-plant, rosinweed, and compass plant. In northeast Illinois the order of host preference, from most to least, among appears to be compass plant > prairie dock > cup-plant > rosinweed.

General Habitat Description: Sunny areas where host plants exist in good numbers. This is generally in wet to dry-mesic prairie.

C. Life History

Number of generations per year: One.

Over-wintering stage: As eggs.

Over-wintering location: Unknown. Probably on the lower stems of host plants or possibly the soil.

Adults active: Late August to early October.

Single-season dispersal ability: Clearly capable of routinely flying 150 to 200 ft.

Immatures active: May to early/mid August. Larvae hatch in spring and bore into host plant stems. By early June, the larvae are into the root crown. Pupation occurs in August in the soil.

II. Management Protocol For Authorized Incidental Take

If the management activity is for the purpose of recovering, maintaining, or improving the grassland, prairie, savanna ecosystem that includes habitat for Silphium borer moths, then incidental take is allowed if these conditions are followed:

A. Burning

1. If no monitoring of Silphium borer moth is occurring, and

   a. If burning in early spring (*see definition)*,

      Then you may burn up to 3/4 of a site's entire host plant population in any given spring, **as long as**, at least 1/3 of the entire host plant population remains unburned for at least two consecutive springs, and there is no more than 200 ft separating burned and unburned host plant populations.

   b. If burning at other times of the year,

      Then you may burn up to 1/3 of the site's entire host plant population in any given 12 month period, **as long as**, at least 1/2 of the entire host plant population remains unburned for at least 3 consecutive growing seasons, and there is no more than 200 ft separating burned and unburned host plant populations.

2. If monitoring of Silphium borer moth is occurring[1],

   Then other burn regimes may be employed under consultation with the DNR Bureaus of Endangered Resources and Integrated Science Services.

[1]*At least 2 years of baseline monitoring must occur before burning begins, and the monitoring must follow protocol acceptable to the DNR Bureaus of Endangered Resources and Integrated Science Services.*

B. Mowing/Haying

1. If no monitoring of Silphium borer moth is occurring, and

   a. If mowing/haying once between May 1st and June 20th, or between Sept. 1st and Oct. 1st,

      Then you may cut up to 1/2 of the site's entire host plant population, **as long as**, at least 1/3 of the entire host plant population remains uncut for at least 3 consecutive growing seasons, and there is no more than 200 ft separating cut and uncut host plant populations.

   b. If mowing/haying once between Oct. 1st and May 1st, or between June 20th and Sept. 1st,

      Then there are no restraints on the activity.

2. If monitoring of Silphium borer moth is occurring[1],

   Then other cutting regimes may be employed under consultation with the DNR Bureaus of Endangered Resources and Integrated Science Services.

[1]*At least 2 years of baseline monitoring must occur before cutting begins, and the monitoring must follow protocol acceptable to the DNR Bureaus of Endangered Resources and Integrated Science Services.*

C. Selective Tree/Brush Cutting

As long as heavy equipment is not used and the host plants are not buried under cut materials, then there are no restraints on this activity.

D. Grazing

No incidental take is allowed under this management.

E. Use of Herbicide

As long as *Silphium* species are not being affected, then there are no restraints on the use of herbicide.

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Presence/Absence Survey Protocol

Personnel conducting the surveys must be adequately trained in the use of sampling techniques and Silphium borer moth identification. The training must include field experience.

Surveying for Adults

Sampling period: Sept. 1 to Sept. 20.

Weather conditions: Air temp: > 50 F
Wind speed: < 15mph
Sky: overcast to partly cloudy (clear is OK if moonlight is minimal)
Moon phase: new moon is best (need minimal moonlight)
Humidity: > 60%

Time of day: 9:00 pm until 2 am.

Number of visits per site: 2 visits per season, with not less than 5 days between visits.

Sample effort per site: One for every 10 acres of *Silphium* occupied habitat.

Sampling method: Night-lighting using a UV-light and a white sheet. The sheet must be monitored for a 5-hour period each time (a non-lethal funnel trap may also be used). Specimens should be released after handling and field identification, except for one voucher per site.

Surveying for Larvae (Preferred method)

Because of the uncertainty of where adults originate from and the very low and variable capture rates associated with night-lighting, surveying for larvae of Silphium borer moths is the best way to detect their presence. However, adults are the best way to confirm the species identification. To do this, larvae can be either hand-reared, or adults can be night-lighted for in September following the above procedures.

Sampling period: May 15 to June 15.

Weather conditions: Irrelevant.

Time of day: Irrelevant.

Number of visits per site: One per year.

Sample effort per site: Inspect all plants on the site up to 200 individuals. If more than 200 plants are present, randomly select plants within all large host plants patches on the site.

Sampling method: The presence of a hole and abundant frass at the base of a host plant stem indicates the presence of a stem borer larvae. Because, other borer moths may, on rare occasion, infest Silphiums, training on the type of hole and frass left by the Silphium borer moth verses other moth species will be required.

Definitions

Site: Any contiguous patch of prairie vegetation or clusters of patches of prairie vegetation not separated from one another by more than 200 ft. of open (non-prairie) cover or by more than 30 ft. of dense brush or tree cover. (Note: roads and trails do not constitute barriers to dispersal.) If the area straddles a property line, the different ownerships must be considered different sites, unless Silphium borer moth survey/management agreements exist between the owners.

Early Spring: Any time before April 20.